CLAIMS

What is claimed is:

1. A method to blend two images, the method comprising:
loading a vector of keys into a vector register;
converting the vector of keys into a first vector of blending factors for a first image and a second vector of blending factors for a second image using a plurality of look up tables in a vector look up unit; and
computing an image attribute for a blended image using the blending factors.

2. A method as in claim 1 wherein the blending factors are one of:
a) floating point numbers;
b) fixed point numbers; and
c) integers.

3. A method as in claim 1 wherein said converting comprises:
generating a first vector of indices in a vector register by replicating a first subset of the vector of keys as a first subset of the first vector of indices for looking up first blending factors for the first image and replicating the first subset of the vector of keys as a second subset of the first vector of indices for looking up second blending factors for the second image; and

looking up simultaneously the first and second blending factors using the first vector of indices in the vector look up unit.

4. A method as in claim 3 further comprising:

storing the first blending factors into the first vector of blending factors and the second blending factors into the second vector of blending factors.

5. A method as in claim 1 wherein said converting comprises:

generating a first vector of indices in a vector register, one key in the vector of keys being replicated as a first plurality of indices in the first vector of indices for looking up respectively a plurality of bit segments of a first blending factor; and

looking up simultaneously a first vector of blending factors comprising the first blending factor using the first vector of indices in the vector look up unit.

6. A method to blend two images, the method comprising:

loading a first vector of keys into a vector register;

loading a second vector of keys into a vector register;

converting the first vector of keys into a first vector of blending factors for a first image and the second vector of keys into a second vector of blending factors for a second image using a plurality of look up tables

in a vector look up unit; and

computing an image attribute for a blended image using the blending factors.

7. A method as in claim 6 wherein the blending factors are one of:

a) floating point numbers;

b) fixed point numbers; and

c) integers.

8. A method as in claim 6 wherein said converting comprises:

generating a first vector of indices in a vector register by replicating a first subset of the first vector of keys as a first subset of the first vector of indices for looking up first blending factors for the first image and replicating a first subset of the second vector of keys as a second subset of the first vector of indices for looking up second blending factors for the second image; and

looking up simultaneously the first and second blending factors using the first vector of indices in the vector look up unit.

9. A method as in claim 8 further comprising:

storing the first blending factors into the first vector of blending factors and the second blending factors into the second vector of blending factors.

10. A method as in claim 6 wherein said converting comprises:

generating a first vector of indices in a vector register, one key in the first vector of keys being replicated as a first plurality of indices in the first vector of indices for looking up respectively a plurality of bit segments of a first blending factor; and

looking up simultaneously a first vector of blending factors comprising the first blending factor using the first vector of indices in the vector look up unit.

11. A machine readable media containing executable computer program instructions which when executed by a digital processing system cause said system to perform a method to blend two images, the method comprising:

loading a vector of keys into a vector register;

converting the vector of keys into a first vector of blending factors for a first image and a second vector of blending factors for a second image using a plurality of look up tables in a vector look up unit; and

computing an image attribute for a blended image using the blending factors.

12. A media as in claim 11 wherein the blending factors are one of:

a) floating point numbers;

b) fixed point numbers; and

c) integers.

13. A media as in claim 11 wherein said converting comprises:

generating a first vector of indices in a vector register by replicating a first subset of the vector of keys as a first subset of the first vector of indices for looking up first blending factors for the first image and replicating the first subset of the vector of keys as a second subset of the first vector of indices for looking up second blending factors for the second image; and

looking up simultaneously the first and second blending factors using the first vector of indices in the vector look up unit.

14. A media as in claim 13 wherein the method further comprises:

storing the first blending factors into the first vector of blending factors and the second blending factors into the second vector of blending factors.

15. A media as in claim 11 wherein said converting comprises:

generating a first vector of indices in a vector register, one key in the vector of keys being replicated as a first plurality of indices in the first vector of indices for looking up respectively a plurality of bit segments of a first blending factor; and

looking up simultaneously a first vector of blending factors comprising the first blending factor using the first vector of indices in the vector look

up unit.

16. A machine readable media containing executable computer program instructions which when executed by a digital processing system cause said system to perform a method to blend two images, the method comprising:

loading a first vector of keys into a vector register;

loading a second vector of keys into a vector register;

converting the first vector of keys into a first vector of blending factors for a first image and the second vector of keys into a second vector of blending factors for a second image using a plurality of look up tables in a vector look up unit; and

computing an image attribute for a blended image using the blending factors.

17. A media as in claim 16 wherein the blending factors are one of:

a) floating point numbers;

b) fixed point numbers; and

c) integers.

18. A media as in claim 16 wherein said converting comprises:

generating a first vector of indices in a vector register by replicating a first subset of the first vector of keys as a first subset of the first vector of indices for looking up first blending factors for the first image and replicating a first subset of the second vector of keys as a second

subset of the first vector of indices for looking up second blending factors for the second image; and

looking up simultaneously the first and second blending factors using the first vector of indices in the vector look up unit.

19. A media as in claim 18 wherein the method further comprises:

storing the first blending factors into the first vector of blending factors and the second blending factors into the second vector of blending factors.

20. A media as in claim 16 wherein said converting comprises:

generating a first vector of indices in a vector register, one key in the first vector of keys being replicated as a first plurality of indices in the first vector of indices for looking up respectively a plurality of bit segments of a first blending factor; and

looking up simultaneously a first vector of blending factors comprising the first blending factor using the first vector of indices in the vector look up unit.

21. A processing system to blend two images, the system comprising:

means for loading a vector of keys into a vector register;

means for converting the vector of keys into a first vector of blending factors for a first image and a second vector of blending factors for a second

image using a plurality of look up tables in a vector look up unit; and

means for computing an image attribute for a blended image using the blending factors.

22. A processing system as in claim 21 wherein the blending factors are one of:

a) floating point numbers;

b) fixed point numbers; and

c) integers.

23. A processing system as in claim 21 wherein said means for converting comprises:

means for generating a first vector of indices in a vector register by replicating a first subset of the vector of keys as a first subset of the first vector of indices for looking up first blending factors for the first image and replicating the first subset of the vector of keys as a second subset of the first vector of indices for looking up second blending factors for the second image; and

means for looking up simultaneously the first and second blending factors using the first vector of indices in the vector look up unit.

24. A processing system as in claim 23 further comprising:

means for storing the first blending factors into the first vector of blending factors and the second blending factors into the second vector of

blending factors.

25. A processing system as in claim 21 wherein said means for converting comprises:

means for generating a first vector of indices in a vector register, one key in the vector of keys being replicated as a first plurality of indices in the first vector of indices for looking up respectively a plurality of bit segments of a first blending factor; and

means for looking up simultaneously a first vector of blending factors comprising the first blending factor using the first vector of indices in the vector look up unit.

26. A processing system to blend two images, the system comprising:

means for loading a first vector of keys into a vector register;

means for loading a second vector of keys into a vector register;

means for converting the first vector of keys into a first vector of blending factors for a first image and the second vector of keys into a second vector of blending factors for a second image using a plurality of look up tables in a vector look up unit; and

means for computing an image attribute for a blended image using the blending factors.

27. A processing system as in claim 26 wherein the blending factors are one of:

a) floating point numbers;

b) fixed point numbers; and

c) integers.

28. A processing system as in claim 26 wherein said means for converting comprises:

means for generating a first vector of indices in a vector register by replicating a first subset of the first vector of keys as a first subset of the first vector of indices for looking up first blending factors for the first image and replicating a first subset of the second vector of keys as a second subset of the first vector of indices for looking up second blending factors for the second image; and

means for looking up simultaneously the first and second blending factors using the first vector of indices in the vector look up unit.

29. A processing system as in claim 28 further comprising:

means for storing the first blending factors into the first vector of blending factors and the second blending factors into the second vector of blending factors.

30. A processing system as in claim 26 wherein said means for converting comprises:

means for generating a first vector of indices in a vector register, one key in

the first vector of keys being replicated as a first plurality of indices in the first vector of indices for looking up respectively a plurality of bit segments of a first blending factor; and

means for looking up simultaneously a first vector of blending factors comprising the first blending factor using the first vector of indices in the vector look up unit.

31. A processing system to blend two images, the system comprising:

a vector register file comprising a plurality of vector registers;

a vector processing unit coupled to the vector register file, the vector processing unit comprising a vector look up unit adapted to look up a vector of data items simultaneously, the vector processing unit:

loading a vector of keys into a vector register in the vector register file;

converting the vector of keys into a first vector of blending factors for a first image and a second vector of blending factors for a second image using a plurality of look up tables in the vector look up unit; and

computing an image attribute for a blended image using the blending factors.

32. A processing system as in claim 31 wherein the blending factors are one of:

a) floating point numbers;

b) fixed point numbers; and

c) integers.

33. A processing system as in claim 31 wherein to convert the vector of keys the vector processing unit:

generates a first vector of indices in a vector register in the vector register file by replicating a first subset of the vector of keys as a first subset of the first vector of indices for looking up first blending factors for the first image and replicating the first subset of the vector of keys as a second subset of the first vector of indices for looking up second blending factors for the second image; and

looks up simultaneously the first and second blending factors using the first vector of indices in the vector look up unit.

34. A processing system as in claim 33 wherein the vector processing unit stores the first blending factors into the first vector of blending factors in a first vector register in the vector register file and the second blending factors into the second vector of blending factors in a second vector register in the vector register file.

35. A processing system as in claim 31 wherein to convert the vector of keys the vector processing unit:

generates a first vector of indices in a vector register in the vector register file, one key in the vector of keys being replicated as a first plurality of indices in the first vector of indices for looking up respectively a

plurality of bit segments of a first blending factor; and

looks up simultaneously a first vector of blending factors comprising the first blending factor using the first vector of indices in the vector look up unit.

36. A processing system to blend two images, the system comprising:

a vector register file comprising a plurality of vector registers;

a vector processing unit coupled to the vector register file, the vector processing unit comprising a vector look up unit adapted to look up a vector of data items simultaneously, the vector processing unit:

loading a first vector of keys into a vector register in the vector register file;

loading a second vector of keys into a vector register in the vector register file;

converting the first vector of keys into a first vector of blending factors for a first image and the second vector of keys into a second vector of blending factors for a second image using a plurality of look up tables in the vector look up unit; and

computing an image attribute for a blended image using the blending factors.

37. A processing system as in claim 36 wherein the blending factors are one of:

a) floating point numbers;

b) fixed point numbers; and

c) integers.

38. A processing system as in claim 36 to convert the vector of keys the vector processing unit:

generates a first vector of indices in a vector register by replicating a first subset of the first vector of keys as a first subset of the first vector of indices for looking up first blending factors for the first image and replicating a first subset of the second vector of keys as a second subset of the first vector of indices for looking up second blending factors for the second image; and

looks up simultaneously the first and second blending factors using the first vector of indices in the vector look up unit.

39. A processing system as in claim 38 wherein the vector processing unit stores the first blending factors into the first vector of blending factors in a first vector register in the vector regsiter file and the second blending factors into the second vector of blending factors in a second vector register in the vector register file.

40. A processing system as in claim 36 wherein to convert the vector of keys the vector processing unit:

generates a first vector of indices in a vector register in the vector register file, one key in the first vector of keys being replicated as a first plurality of indices in the first vector of indices for looking up respectively a plurality of bit segments of a first blending factor; and

looks up simultaneously a first vector of blending factors comprising the first blending factor using the first vector of indices in the vector look up unit.